

CLAIMS

1. A system for coordinating channel bonding operations of a plurality of transceivers, comprising:
 - a master transceiver that performs channel bonding operations;
 - a plurality of first level transceivers that perform channel bonding operations, each first level transceivers being controlled by the master transceiver; and
 - a plurality of second level transceivers that perform channel bonding operations, each second level transceiver being controlled by one of the plurality of first level transceivers.
2. The system of claim 1 wherein each of the plurality of transceivers can be selected as either the master transceiver, one of the first level transceivers or one of the second level transceivers.
3. The system of claim 1 further comprising a clock signal, and wherein the master transceiver and the plurality of first level transceivers generate respective control signals at different cycles of the clock signal.
4. The system of claim 1 wherein each of the plurality of transceivers contains at least one buffer for the channel bonding operations.
5. An apparatus that generates an output signal in response to a first and a second input signals, comprising:
 - a first flip-flop that accepts the first input signal and generate an output signal;
 - a first multiplexer having an output terminal and at least a first and a second input terminal, the first input terminal accepting the output signal of the first flip-flop,

and the second input terminal being connected to the second input signal;

a second flip-flop having an output terminal and an input terminal that connects with the output terminal of the first multiplexer;

a second multiplexer having an output terminal and at least a first and a second input terminal, the first input terminal being connected to the output terminal of the second flip-flop, and the second input terminal being connected to the second input signal; and

a third flip-flop having an output terminal and an input terminal, the input terminal being connected to the output terminal of the second multiplexer.

6. The apparatus of claim 4 further comprising:

a third multiplexer having an output terminal and at least a first and a second input terminal, the first input terminal being connected to the first input signal, the second input terminal being connected to the second input signal; and

a fourth flip-flop having an output terminal and an input terminal, the input terminal being connected to the output terminal of the third multiplexer.

7. A communication system comprising:

a first device having a plurality of transceivers; and
a second device having a plurality of transceivers;

wherein the plurality of transceivers in the first device is connected to the plurality of transceivers in the second device; and

each of the transceivers comprises:

a buffer,

a first flip-flop that accepts a first input signal and generate an output signal;

a first multiplexer having an output terminal and at least a first and a second input terminal, the first input

terminal accepting the output signal of the first flip-flop, and the second input terminal being connected to a second input signal;

a second flip-flop having an output terminal and an input terminal that connects with the output terminal of the first multiplexer;

a second multiplexer having an output terminal and at least a first and a second input terminal, the first input terminal being connected to the output terminal of the second flip-flop, and the second input terminal being connected to the second input signal; and

a third flip-flop having an output terminal to control the buffer and an input terminal, the input terminal being connected to the output terminal of the second multiplexer.

8. The system of claim 7 wherein each of the transceivers further comprises:

a third multiplexer having an output terminal and at least a first and a second input terminal, the first input terminal being connected to the first input signal, the second input terminal being connected to the second input signal; and

a fourth flip-flop having an output terminal and an input terminal, the input terminal being connected to the output terminal of the third multiplexer.